

Provincial Debt

Prehistoric Alberta

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WITHIN

OUR

BORDERS

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Total Debt Of Province Reduced To Less Than \$100,000,000 For First Time In More Than Twenty Years

During the last fiscal year, the Public Debt of the Province was reduced by \$18,770,556. The following statement shows the Public Debt at March 31, 1951, as compared to March 31, 1950:

	Public Debt March 31/51	Public Debt March 31/50
Funded Debt	\$100,596,538	\$121,165,894
Guaranteed Debenture Debt	26,000	32,000
Unfunded Debt	11,207,594	9,402,794
	\$111,830,132	\$130,600,688

It will be noted from these figures that the substantial reduction of over \$20,000,000 in the funded debt was offset to some extent by an increase of \$1,804,800 in the unfunded debt which at March 31, 1951, consisted of:

Civil Service Pension Fund	\$ 7,807,657
Savings Certificates	652,724
Accounts Payable	2,707,391
Miscellaneous	39,822
	\$11,207,594

An amendment to the Public Service Pension Act, passed at the last session, placed the Pension Fund on a pay-as-you-go basis and eliminated the Pension Fund liability from the unfunded debt. Receipts and payments on the Pension Fund now will be included annually in the Income section of the Budget. As a result of this and the retirement of accounts payable, the unfunded debt was reduced by \$10,695,544 during the first nine months of the present fiscal year and amounted to \$512,050 as at December 31, 1951. During the same nine months' period, the funded debt of the Province was reduced by \$2,853,050, which includes the redemption on June 1, 1951, of \$2,266,000 of U.S. and Canadian pay debentures. This was the first maturity of the two pay non-callable serial debentures issued to finance the 1945 debt re-organization program.

The following statement shows the exact position of the public debt of the Province at the end of each fiscal year, commencing with March 31, 1936, and also the position as at December 31, 1951:

	Net Funded Debt	Net Guaranteed Debenture Debt	Unfunded Debt	Total Debt
March 31, 1936	\$142,941,031	\$5,672,358	\$18,413,755	\$167,027,144
March 31, 1937	143,487,203	5,165,775	17,051,783	165,704,761
March 31, 1938	143,573,130	5,121,144	15,708,842	164,403,116
March 31, 1939	143,412,253	5,054,404	15,386,741	163,853,398
March 31, 1940	142,926,186	5,002,516	8,573,071	156,501,773
March 31, 1941	142,189,968	4,803,388	8,247,815	155,241,171
March 31, 1942	141,455,384	4,595,336	7,892,859	153,943,579
March 31, 1943	140,534,443	4,380,217	7,696,473	152,611,133
March 31, 1944	139,589,060	4,158,713	7,531,414	151,279,187
March 31, 1945	138,821,431	3,941,644	7,396,744	150,159,819
March 31, 1946	140,805,449	282,000	5,414,315	146,501,764
March 31, 1947	139,198,970	101,500	5,767,853	145,068,323
March 31, 1948	121,447,657	56,500	6,527,020	128,031,177
March 31, 1949	120,826,203	38,000	9,034,077	129,899,280
March 31, 1950	121,165,894	32,000	9,402,793	130,600,687
March 31, 1951	100,596,538	26,000	11,207,594	111,830,132
December 31, 1951	97,742,488	4,000	512,050	98,258,538

It will be noted from these figures that there has been a net reduction in the Public Debt of the Province of \$68,768,606 from March 31, 1936, to December 31, 1951. For the first time in over 20 years the total Public Debt of the Province now stands at less than \$100,000,000.

As against the remaining debt of \$98,258,538 the Province has in cash surpluses and investments, exclusive of miscellaneous advances and loans to government departments and municipalities, approximately \$72,000,000, leaving a difference of less than \$27,000,000 between these accumulated financial reserves and the total remaining Public Debt. All of the unmatured funded debt is organized on a serialized basis at low rates of interest and with provision for annual retirements of principal under a schedule which, if adhered to, will make the Province entirely debt free by the year 1973.

To carry out this debt retirement schedule, it will require for the annual payment of both interest and principal less than five percent of the Province's revenue on Income Account on the basis of the estimated revenue for the ensuing year. This compares with approximately 51 percent of the net revenue on Income Account required to pay the interest charges alone in 1936. The debt retirement program may be accelerated if at a later date it proves to be in the public interest to exercise the call feature contained in over 73 percent of the remaining unmatured funded debt.

Municipal Assistance Totals \$26,500,000

The Government of Alberta will provide \$26,500,000 in direct financial assistance to municipalities this year. The following is a summary of how municipalities and other local authorities will be helped.

EDUCATION:	
School grants	\$ 9,870,000
Grants to Teachers' Retirement Fund	565,000
Capital construction grants under The School Buildings Assistance Act	2,000,000
	\$12,435,000
PUBLIC HEALTH:	
Grants for Hospitalization	\$ 2,606,000
Hospital Construction Grants	500,000
Grants for Health Services	58,000
	\$ 3,164,000
LANDS AND FORESTS DEPT.:	
Increased refunds to Municipalities from grazing leases collected	\$ 200,000

HIGHWAYS:

Grants for Roads in Municipal and Improvement Districts	\$ 3,880,000
Grants for Bridges	800,000
	\$ 4,680,000

TREASURY DEPT.:

Grants to Municipalities in lieu of taxation on certain Government Buildings	\$ 30,000
Grants under the Municipal Assistance Act	5,991,000
	\$ 6,021,000
	\$26,500,000

In addition to this direct financial assistance provision is made for expenditures totalling \$2,587,000 to defray the cost of various public welfare services previously the responsibility of local taxpayers but now assumed in whole or in part by the Provincial Government.

These combined appropriations total \$29,087,000, an increase of \$3,396,000 over last year and represent approximately 40 percent of the total estimated provincial expenditures on Income Account for the ensuing year.

Government Assistance Offered To Farmers Wishing To Build Dugouts In Peace River Area

One of the greatest difficulties experienced by farmers in the Peace River district has been obtaining sufficient water for stock and household use. In many parts of the rich farming area there are no wells and residents have been forced to rely upon natural streams and rivers.

The development of the livestock industry during the Second Great War made the problem so serious that the Department of Agriculture introduced the Peace River District Farm Water Supply Assistance Policy. This policy provides government assistance in the construction of farm dugouts to catch spring runoff.

Since that time, more than 1,900 dugouts have been constructed in the Peace River district. As part of the policy, the Department of Agriculture contributed five cents per cubic yard for excavation to a maximum of \$100. The average assistance has been about \$90 per dugout bringing the total assistance under this policy to about \$684,000.

A dugout is a large excavation which is designed to impound water in the spring and store it for future use. Regulations of policy stipulate a dugout must be a minimum of 1,500 cubic yards in capacity and 10 feet in depth. Any dugout smaller than these measurements would likely render the reservoir useless in the winter, when water would freeze to the bottom.

In addition, the sides and ends of the dugout must be sloped and waste piles of earth moved at least 10 feet from the edge of the excavation. When it has been completed, a fence must be erected around it, before the farmer is eligible for assistance. The last measure is to prevent the drowning of children and farm animals and to protect the dugout from damage by the trampling of livestock.

Construction work is carried out by private contractors who usually follow plans provided by the Department of Agriculture. Average cost of earth work is 20 cents per cubic yard.

Upon completion, application for assistance is sent to the local district agriculturist, who inspects the dugout and forwards his information to the Department of Agriculture in Edmonton. In signing the declaration, the farmer agrees to take proper precautions against pollution and to protect the dugout from erosion by seeding down grass or planting shrubbery around it.

An average sized dugout should be located so that it has a drainage area of at least 35 acres, to assure a year round supply of water. Care also should be taken to see that there is no drainage from barns, manure piles or other sources of pollution.

The standing water naturally becomes stagnant during the summer, so adequate filtering and purifying is suggested for domestic use. This is done by digging a trench about 30 to 50 feet out from the dugout and filling it with clean gravel and sand. A well is constructed at the end of the trench and, if desired, a charcoal purification chamber may be installed.

In the summer, low forms of plant life often form a green scum on the surface of the water. Although this is not injurious, it can be prevented by the use of copper sulphate (blue vitriol). The average dosage is about one pound for every 100,000 gallons of water and should be repeated every few weeks during the summer. This chemical retards the growth of these algae and is harmless to humans and livestock.

Where the use of a dugout affects the flow of any stream or watercourse, permission for excavation must be obtained from the Director of Water Resources, Edmonton.

This assistance policy is applicable only in the district commonly known as the Peace River area. Similar dugouts also are constructed in other parts of Alberta, although no provincial government assistance is given.

Summer School For Grade Twelve

Students requiring one or two Grade 12 subjects for university entrance may complete their high school program at the Grade 12 summer school course which will be held at Red Deer Composite High School July 8-Aug. 15.

Courses will be held in Grade 12 English, Social Studies, Algebra, Trigonometry, Analytical Geometry, Physics, Chemistry, Biology and French. The school is primarily for students who are confident of having 95 or more credits at the end of the year 1951-1952. Students wishing to take two subjects will be considered.

The course also is open to teachers who are deficient in certain subjects. However, teachers who have not recently covered the requisite work of their chosen subject, should complete that work by correspondence before attempting the Grade 12 course.

Tuition fees are \$10 per subject with an additional registration fee of \$5. Accommodation charges for the period of the summer school are \$50. All inquiries should be addressed to G. F. Bruce, Director of the Grade 12 Summer School, Department of Education, Edmonton.

Easy Proof Of Age Available To Old-Timers

An unusual problem has cropped up for old timers who know how old they are—but can't prove it.

With the introduction of the new old age pension plans, applicants must be able to prove they are in the eligible age group. In this modern day of efficient birth registration, proof of age is no problem. But it was a different story 70 years ago.

Many of the old timers came from the Ukraine or from behind what is now known as the Iron Curtain, where it would be almost impossible to obtain a copy of their birth certificates if any existed. Many others came from eastern Canada and in some cases find their births were never registered; others were born in the United States where no general system of birth registration was introduced until recent years.

But the Vital Statistics Division of the Department of Public Health has found the solution to many of these problems on the top shelf in its record room. Gathering dust and filed away where it was thought they would never be used again are the early marriage records for Alberta.

"Old timers who were born in Alberta should have no trouble proving their age," said A. Packford, Deputy Registrar General. "We have records for births, marriages and deaths as far back as 1885. When the Province was formed in 1905, we took over all records for our part of the North-West Territories."

Mr. Packford explained that many old timers from Europe, eastern Canada and the United States, who now are having difficulty proving their ages, also can find their solution at the Vital Statistics Division.

"Although many of the old timers were not born in Alberta, they may have been married here," stated Mr. Packford. "When the certificates were made out, their ages appeared on our records. This is proof enough to qualify for old age pensions."

At the present time, more than a dozen requests for copies of marriage records are received by the division daily. The original records are no longer on the top shelf, but have been moved down within easy reach of the busy staff.

Anyone married in Alberta who requires proof of their age should write to Vital Statistics Division, Department of Public Health, Alberta Jasper Building, Edmonton. The full names of the couple, place of marriage and the approximate date of marriage should be included with inquiries.

Hogs Marketed At Wrong Weights

Alberta hog producers are advised by the Alberta Department of Agriculture to market their hogs at proper weights. During 1951, an increased number of hogs weighing more than the prescribed weights for grades "A" and "B" were marketed.

Heavy hogs mean more to the farmer than reduced sales price and loss of the bonus given for marketing hogs at proper weight. A. J. Charnetski, Live Stock Supervisor, said more feed is needed for each additional gain of a pound in weight after a weight of 200 pounds is reached.

The percentage of top grades could be increased considerably by feeding balanced diets and not marketing any hogs over 210 pounds in weight. Skim milk should be used or replaced with protein supplements.

Mr. Charnetski said inferior breeding is another cause of degraded hogs. Parent stock must be of high quality to produce top grade hogs. High quality includes good length, fine shoulders, lack of bulge in break of rib, good type rear flanks, and full, firm hams. These points should be present in both sire and female.



A display showing the year round sports activities in Alberta was one of the main attractions at the Sportsman's Show, held March 14 - 21 in Toronto. The general display was designed by the Publicity Bureau and the hand-colored photographs were prepared by the Film and Photographic Bureau of the Department of Economic Affairs. The bucking horse was painted by Lillian C. Clapp, of Ponoka, an art student at the Provincial School of Technology and Art, Calgary. Thousands of visitors stopped at the display daily and were given literature on vacation opportunities in the Province.

(Rapid, Grip and Batten)

Government Architects Assist Expansion Of Services

Many new buildings are constructed in Alberta each year to provide facilities for the expansion of government services. The designing of these new buildings, additions and renovations is the main responsibility of the Architectural Branch of the Department of Public Works.

Last year alone there were approximately 90 plans drafted for construction of government buildings, ranging from modern offices and institutional buildings to minor additions and renovations. More important construction jobs started last year were the reformatory at Bowden, horticultural station at Brooks, shops and nurses' aides training school at Calgary, Provincial building at Grande Prairie, cerebral palsy clinic and alternate civil defence headquarters at Edmonton, and new dormitories and other buildings at Red Deer, Ponoka, Oliver, Lethbridge and Fort Saskatchewan.

In addition, work was continued on the new Aberhart Memorial Sanatorium and Provincial Building No. 2 at Edmonton, Provincial building at Drumheller, administration building addition at Keith and tuberculosis unit at Oliver.

The Architectural Branch employs draftsmen, architects, structural engineers, heating, ventilating and electrical engineers to insure that all plans are best suited to the requirements of the

proposed buildings and that contracts are carried out efficiently by construction firms.

The Architectural Branch keeps informed on government buildings during the period of construction and often is required to draw up further detailed drawings.

The construction of a new building or addition or renovation of an existing structure usually is proposed by the department concerned. Its proposals are set forth by its minister and included in the estimates for the next year. If the construction is approved by Legislature, the Architectural Branch is informed as to the requirements, estimated cost, location and other factors which assist them in designing a building.

Working under the direction of the Superintendent of Buildings, the draftsmen or architects draw the plans. These are submitted for approval to the minister and the various departments concerned before the contracts are let. When the plans are approved, working drawings, specifications and contract agreements are prepared by the branch.

Tenders then are called by the deputy minister and the Department of Public Works supervises all construction work. In some cases where it is advantageous, construction is undertaken by maintenance staff and crews of the department.

Some design work on rural schools is handled in co-operation with the Department of Education and architects and draftsmen act in an advisory capacity for other departments when suitable supervision is required. In addition, advice is given to departments in regard to the design and selection of furniture, drapes and colors for new buildings.

The shortage of building materials had added to the difficulties of designing work during the postwar years. Besides taking into consideration the utilization and cost of proposed buildings, the branch also must plan a structure which will not be hampered because of lack of materials.

Tar Sands Development To Begin This Summer

Five independent companies will start an exploration program this summer to develop the Athabasca oil sands, while arrangements have been made by a Swedish oil firm to lease sections of the Province's plant at Bitumont to experiment with their extraction process.

The companies, which have leased almost 250,000 acres of land west of the Athabasca River and north of Fort McMurray, include Calvan Consolidated Oil and Gas Corporation, Asher Oil Company, Pacific Petroleum Limited, New Continental Oil of Canada and Charter Oils. Their program will consist of systematic core drilling to determine the amount of overburden above the productive oil sands formations, the thickness of the sand and the petroleum content.

Socony-Vacuum Exploration Co., Sun Oil Co. Ltd., and Edward Gilbert, all of Calgary, also have applied for reservations in the oil sands. Each of the three applicants have applied for reservations of 50,000 acres.

The Swedish Shale Oil Company will attempt to extract oil from the sands by a process involving heat. The present proven systems are by the hot water and the cold water methods.

Oil And Gas Analyses Now Made By University

The Calgary chemical laboratory of the Petroleum and Natural Gas Conservation Board has been closed and in future its work will be done by the University of Alberta at Edmonton.

The Conservation Board eventually will establish its chemical laboratory in the new engineering building of the University of Alberta which is expected to be finished in the fall of 1953.

Until the completion of the new laboratory, oil, gas and formation water can be analyzed by the departments of chemistry and chemical and petroleum engineering at the University of Alberta.

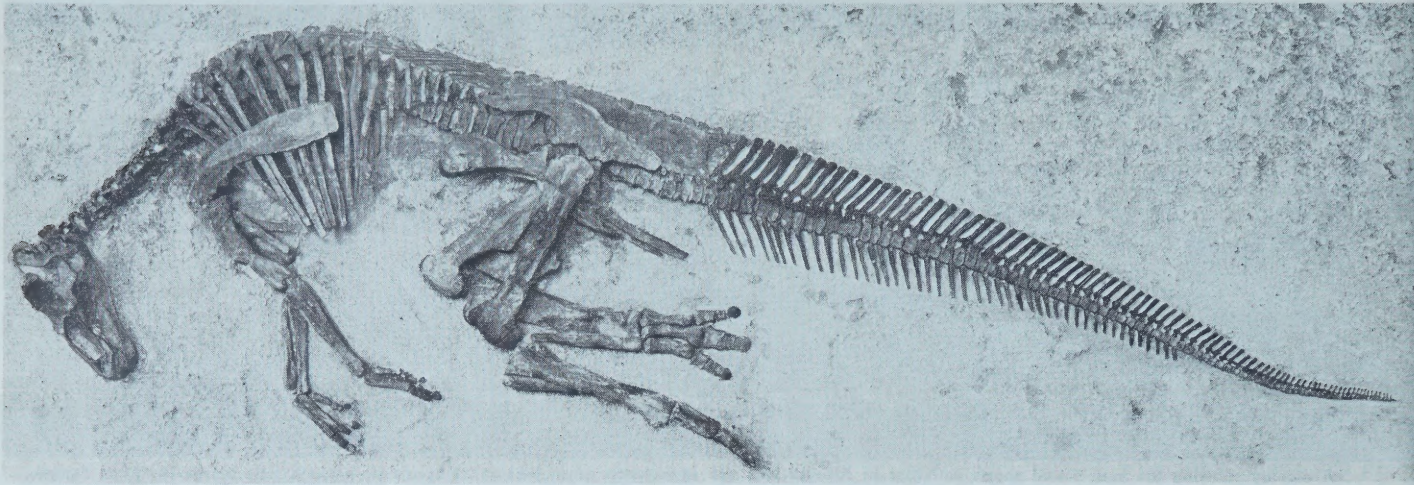


"Within Our Borders" is a publication designed to acquaint the people of the Province with the administration and services of the Alberta Government.

It is believed the many and varied services of the Government will be effective in the degree they are known and used.

Any material used is for immediate republication. All photographs used are Alberta Government Photographs unless otherwise specified.

Correspondence should be addressed to "Within Our Borders," Legislative Buildings, Edmonton.



A skeleton of a duck bill dinosaur found in Alberta

(National Museum of Canada)

Prehistoric Life In Alberta

Age Of Alberta Estimated At More Than A Billion Years

Rocks And Soils Reveal Story Of Prehistoric Times When Seas Covered Entire Province

(This is the first of four articles dealing with the development of prehistoric life in Alberta. Succeeding articles will appear in later issues of *Within Our Borders*.)

The opportunities offered for research into the strange plant, insect and animal forms of the past attract many prominent paleontologists to the Province, particularly to that area in the vicinity of Drumheller which is known as "The Badlands."

The fascinating story of Alberta in prehistoric times is unknown to most Albertans. So that the people of Alberta may gain some knowledge of the significance of their Province in the continual search for remains of extinct life, these articles are presented.)

Scientists, detectives in the mysteries of the earth's past ages, are unfolding an astonishing but true drama as they yearly add more chapters to the intriguing story of Alberta's prehistoric times. Their clues lie in the rocks, the soils, the rivers, lakes and streams, along the valley floors and across the broad prairies, into the rolling foothills, the rugged, majestic mountains and to the age-old glaciers of the Canadian Rockies as well.

They are probing back 200 million years through eons of fire and flood, tropical oceans and grinding glaciers, upheavals of mountain ranges and placid shallow, silt-laden seas, dense forests of gigantic trees and into the dens and warrens of monsters that inhabited the warm waters and verdant timberlands of this region more than ten million years ago.

Bit by bit and piece by piece, these geologists are rebuilding the story of our prehistoric times and are unearthing relics which reveal the nature of plant and animal life long, long before "the hills in order stood."

A Study of Species

The story, expressed most effectively and clearly in the exposed faults and folds of the mountains is the history of the earth. Paleontology, the science which deals with the history of life on the earth, is a study of species of life rather than individuals or nations or empires. Through the bones of animals found in the rocks, the paleontologists or "fossil-hunters" have been able to reconstruct the animals of millions of years ago.

Man is a newcomer to Alberta. Millions of years before he appeared, life existed in a great variety of forms. Each geological period, covering millions of years, had its own special types of animals, usually quite different from those of earlier or later geological periods.

Geological estimates give Alberta's age as 1,691,000,000 years, a scale of time almost incomprehensible to Man who thinks of time in reference to his own life-span. In this immense time-scale, Man occupies only the final and smallest section—a period which began approximately 1,000,000 years ago. Yet the newcomer Man, the latest life to develop on earth, has been the only species to unravel the story of the development of life on earth and pass on to

posterity histories and descriptions of animals he never saw in their living forms.

The paleontologists would know nothing about these ancient animals without the bones, shells, tracks and impressions which became buried in the sand or mud which covered them and eventually hardened into rock. Through study of fossil remains, the scientist can form a conception of extinct animal and plant life, and its habits and habitat. He also can determine at what geological periods land areas—now separated by oceans—were joined.

Life Began in Seas

It is fairly certain that life began in the seas, which covered the entire world at the beginning of time. At first there were only primitive forms of sea weeds. It was about 1,200,000,000 years before corals and shelled creatures like oysters and clams began to appear and then another 160,000,000 years before fish became the highest order of life. Another 20,000,000 years elapsed before the Devonian Period, familiar to Alberta oil men, was ushered in. Fishes still dominated the scene but the first plants appeared.

Sometime before the end of the Devonian period, evolution moved forward another important step. Prior to this time, all life had existed in the sea but now some anonymous sea creature of unknown species appeared to revolutionize life. The creature's motives are not known—perhaps it was curiosity, perhaps the impulse of some great cosmic force—but, for some reason, it made the tremendous effort of moving from the safety of the sea to the strange environment of land. Possibly this early adventurer moved only as far as the shoreline of the sea and settled in the ooze where the reassuring sea tides could cover it at intervals.

The first land creature probably gave his life in the attempt to make the transition from sea to land environment. But he provided an example to others, who followed him, some dying, some surviving, but all gradually moving farther from the sea. By the time the invaders from the sea had consolidated their beachhead, they had changed physically. Now, instead of being fish, they were crude amphibian animals equipped with rudimentary legs to move across ground, and long tails to assist in swimming. The Age of Amphibians, which would last 70,000,000 years, had come into being.

What was this land like which received its first inhabitants from the sea? According to one theory, the Age of Fishes, which preceded the Age of Amphibians, featured a continual fireworks display by thousands upon thousands of volcanoes. These volcanoes, erupting for thousands of years, blew water vapor and carbon dioxide into the atmosphere. The volcanic activity heated the earth and the heat was prevented from radiating far by dense clouds of water vapor and carbon dioxide which hung around the earth like a big comforter. The climate which greeted the amphibians was warm and damp, very much like that of Central America or Equatorial Africa today.

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